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(54) Title: PULSE-MEDIUM PERFUSION BIOREACTOR WITH IMPROVED MASS TRANSPORT FOR MULTIPLE 3-D CELL CONSTRUCTS

(57) Abstract: Disclosed is a novel net member for supporting one or more cell constructs in the culture chamber of a bioreactor, which comprises an array of impermeable pyramidal elements protruding from the face thereof, wherein each of the corners of the base of each of said impermeable pyramidal elements comprises a circular opening. This net member provides for uniform and unobstructed flow of culture medium through 3D cell constructs in culture. Also disclosed are a bioreactor and bioreactor system incorporating said net member. The bioreactor and bioreactor system may be used in the bioproduction of therapeutic proteins and stem cell expansion.

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